Cisco 2x2 RPD Software 4.2

Note
Before proceeding with the upgrading or downgrading operation, be aware that the versions of Cisco cBR-8 router and 2x2 RPD must be compatible. If the versions are not compatible, the 2x2 RPD may remain in the **init(gcp)** state. The following list provides information on the compatible cBR-8 and 2x2 RPD versions:

- Cisco IOS XE Gibraltar 16.10.1c works with 2x2 RPD 2.0.1
- Cisco IOS XE Gibraltar 16.10.1g works with 2x2 RPD 3.1
- Cisco IOS XE Gibraltar 16.12.1w works with 2x2 RPD 4.1
- Cisco IOS XE Gibraltar 16.12.1x works with 2x2 RPD 4.2

Upgrading to Cisco 2x2 Software 4.2

Pre-check

Note
Before upgrading to Cisco 2x2 RPD Software 4.2 from Cisco 2x2 RPD Software 4.1, determine if a 2x2 RPD has a corrupted read/write partition (Scratch partition), and recover the Scratch partition if it is corrupted.

Determining if a 2x2 RPD has a corrupted Scratch partition

Use one of the three options below to determine if a RPD has a corrupted Scratch partition.

- The banner displayed when a user logs in to the RPD (console or SSH) will report that the scratch partition is corrupted and needs to be reformatted. For example:

```
*********************************************
*          Capacicom RPHY CLI              *
*                                          *
```

```
*        WARNING: Authorised Access Only      *
************************************************

Welcome admin it is Thu Jan  1 00:01:29 UTC 1970

WARNING: Scratch partition is corrupted and needs to be reformatted!
```

- An event (ID=0x81570062) will be sent to the Core notifying of the scratch corruption. It will most likely be a pending event, so the Core will need to retrieve pending events to check it. For example:

```
1970-01-01 00:01:32,415-HalDriverClient.py-1293-DEBUG-Alarm received type=0x81570062,
clear=0, desc="Scratch Partition is Corrupted"
```

- Use command **check-scratch** to check the status of the scratch partition.

```
> enable
# configure terminal
(config)# system
(config-system)# check-scratch
Scratch partition is corrupted and needs to be reformatted.
```

Recovering the Scratch Partition

Use command **recover-scratch** to recover the scratch partition when it is in a corrupted state.

```
> enable
# configure terminal
(config)# system
(config-system)# recover-scratch
```

This command will reformat the scratch partition and reboot the RPD.

Note   Reformat is similar to resetting the RPD to factory defaults. This means that debug logs, modified passwords, any login specific settings, TACACS+ key will all be lost.

After the reboot, the RPD will function as normal and should report no scratch partition errors.

Upgrading 2x2 RPD and cBR-8 Router

The following scenarios are supported for upgrading the 2x2 RPD and cBR-8 router.

cBR-8 original version	2x2 RPD original version	2x2 RPD state before upgrade	cBR-8 upgrade version	2x2 RPD upgrade version	2x2 RPD state after upgrade
Lower than 16.12.1x	Lower than 4.2	online	16.12.1x	4.2	online
Lower than 16.12.1x	Lower than 4.2	init(gcp)	16.12.1x	4.2	online

Before you begin

Before upgrading the system, make sure that the following requirements are met:

- Download the two files from the following Cisco.com Software Center URL:

  - IOS XE Software Version 16.12.1x **cbrsup-universalk9.16.12.01x.SPA.bin**:
    https://software.cisco.com/download/home/286283913/type

  - RPD 2x2 V4.2: **RPD-2x2-V4.2.1.SSA**: https://software.cisco.com/download/home/286321539/type

- Console access for both SUP line cards is required.

✎

Note For more information on how to upgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Cisco cBR-8 Upgrade Guide and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

Step 1 Copy the Cisco IOS XE Gibraltar 16.12.1x package to bootflash and stby-bootflash:

```
copy <location>/cbrsup-universalk9.16.12.01x.SPA.bin bootflash:
copy <location>/cbrsup-universalk9.16.12.01x.SPA.bin stby-bootflash:
```

Step 2 Verify the Cisco IOS XE Gibraltar 16.12.1x package against the md5 hash as provided in the Cisco.com Software center.

```
verify /md5 bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
```

Step 3 Back up the current running config to bootflash.

```
copy running-config bootflash:pre-upgrade.cfg
```

Step 4 Check the system status before the upgrade. Save the information to compare against the system status after the upgrade. For commands on checking the status, see the **show** commands at the end of this section.

Step 5 Copy the Cisco 2x2 RPD image to a TFTP server that is accessible by the 2x2 RPD.

Step 6 Verify the current 2x2 RPD software version by running the following command:

```
show cable rpd sw-version
```

Step 7 Upgrade all 2x2 RPD images to version 4.2 by using SSD from the Cisco cBR-8 router.

```
cable rpd all ssd <tftp_server_ip> tftp <rpd_V4.2_file_path>
```

Note The **all** command is not recommended in large-scale 2x2 RPD deployments. If you have a larger number of 2x2 RPDs, it is recommended to upgrade the 2x2 RPD per line card or per OUI.

Step 8 Verify 2x2 RPD SSD status.

The status will show as `downloading`.

```
cable rpd all ssd status
```

Step 9 Verify that all 2x2 RPDs have downloaded the new image.

```
cable rpd all ssd status
show cable rpd
```

Note   The 2x2 RPD will automatically reboot after the download is completed successfully. That is, the 2x2 RPD will go offline then back online and run the new image.

Step 10   Configure the chassis to boot the system with Cisco IOS XE Gibraltar 16.12.1x image. Save the running configuration.

```
configure terminal
no boot system
boot system bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
config-register 0x2102
end
copy running-config startup-config
```

Step 11   Reload and start the Cisco cBR-8 router.

```
Reload
```

Step 12   Adjust the 2x2 RPD type/max-carrier/base-power as necessary.

Step 13   Verify that the 2x2 RPD have been upgraded to new version and are online.

```
show cable rpd
show cable rpd sw-version
```

What to do next

The following **show** commands might be used during the verification test:

- **show version**

- **show platform**

- **show platform diag**

- **show environment**

- **show environment power**

- **show platform hardware slot P <0-5> mcu status**

- **show facility-alarm status**

- **show redundancy**

- **show redundancy line card all**

- **show ip ospf neighbor**

- **show cable modem voice**

- **show cable calls**

- **show cable licenses all**

- **show inventory**

- **show log**

- **show cable rpd**

- **show cable modem summary total**

- **show cable rpd lcha**

- **show running**

- **show tech**

Upgrading 2x2 RPD Only

Before you begin

Before upgrading the system, make sure the following requirements are met:

- All 2x2 RPDs are in init(gcp), init(clock), or online state.

- Download new image file from the following Cisco.com Software Center URL:

  https://software.cisco.com/download/home/286321539/type

  - RPD 2x2 V4.2: **RPD-2x2-V4.2.1.SSA**

Step 1 Copy the Cisco 2x2 RPD V4.2 image package to a TFTP server where it can be accessed by the 2x2 RPD.

Step 2 Verify current 2x2 RPD software version.

```
show cable rpd sw-version
```

Step 3 Upgrade all 2x2 RPDs image to V4.2 through SSD.

cable rpd all ssd <tftp_server_ip> tftp <rpd_V4.2_file_path>

Note The **all** command is not recommended in large scale 2x2 RPD deployment. If you have many 2x2 RPDs, it is recommended to upgrade the 2x2 RPD per line card or per OUI.

Step 4 Verify the 2x2 RPD SSD status. It will show the status as `downloading`.

```
cable rpd all ssd status
```

Step 5 Verify that all 2x2 RPDs have downloaded the new image.

```
cable rpd all ssd status
show cable rpd
```

You can also use **cable rpd slot <slot_num> ssd status** to check upgrade status for each line card.

Step 6 Verify that the 2x2 RPD have been upgraded to new version and are online.

```
show cable rpd
```

```
show cable rpd sw-version
```

What to do next

These **show** commands might be used during the verification test:

- **show version**
- **show platform**
- **show platform diag**
- **show environment**
- **show environment power**
- **show platform hardware slot P <0-5> mcu status**
- **show facility-alarm status**
- **show redundancy**
- **show redundancy line card all**
- **show ip ospf neighbor**
- **show cable modem voice**
- **show cable calls**
- **show cable licenses all**
- **show inventory**
- **show log**
- **show cable rpd**
- **show cable modem summary total**
- **show cable rpd lcha**
- **show running**
- **show tech**

Upgrading cBR-8 Router Only

The following scenarios are supported in upgrading the cBR-8 router.

cBR-8 original version	2x2 cRPD version	2x2 RPD state before upgrade	cBR-8 upgrade version	2x2 RPD state after upgrade
Lower than 16.12.1x	4.2	init(gcp)	16.12.1x	online

Note   For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

Before you begin

Before upgrading the system, make sure the following requirements are met:

- The firmware versions are not lower than the ones listed in Firmware versions table. Otherwise upgrade the firmware versions, see Upgrading the Cisco cBR-8 Router Firmware.

- Download new image file from the following Cisco.com Software Center URL:

  https://software.cisco.com/download/home/286283913/type

    - IOS XE Software Version 16.12.1x: **cbrsup-universalk9.16.12.01x.SPA.bin**

- Console access for both SUPs are required.

What to do next

These **show** commands might be used during the verification test:

- **show version**

- **show platform**

- **show platform diag**

- **show environment**

- **show environment power**

- **show platform hardware slot P <0-5> mcu status**

- **show facility-alarm status**

- **show redundancy**

- **show redundancy line card all**

- **show ip ospf neighbor**

- **show cable modem voice**

- **show cable calls**

- **show cable licenses all**

- **show inventory**

- **show log**

- **show cable rpd**

- **show cable modem summary total**

- **show cable rpd lcha**

> • **show running**
>
> • **show tech**

Downgrading from Cisco 2x2 Software 4.2

Downgrading 2x2 RPD and cBR-8 Router

The following scenarios are supported in downgrading the 2x2 RPD and cBR-8 router.

cBR-8 original version	2x2 RPD original version	2x2 RPD state before upgrade	cBR-8 downgrade version	2x2 RPD downgrade version	2x2 RPD state after downgrade
16.12.1x	4.2	online	Lower than 16.12.1x	Lower than 4.2	online
16.12.1x	4.2	online	Lower than 16.12.1x	Lower than 4.2	init(gcp)

Before you begin

Before downgrading the system, make sure the following requirements are met:

- Download two files from the following Cisco.com Software Center URL:

  - IOS XE Software: https://software.cisco.com/download/home/286283913/type

    - IOS XE Software Version 16.12.1w: **cbrsup-universalk9.16.12.01w.SPA.bin**

    - IOS XE Software Version 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**

    - IOS XE Software Version 16.10.1c: **cbrsup-universalk9.16.10.01c.SPA.bin**

  - 2x2 RPD Software: https://software.cisco.com/download/home/286321539/type

    - RPD 2x2 V4.1: **RPD-2x2-V4.1.0.SSA**

    - RPD 2x2 V3.1: **RPD-2x2-V3.1.3.SSA**

    - RPD 2x2 V2.0.1: **sw.package.signed_enc.2x2rpd.2.0.1.signed.tar.gz.SSA**

- Console access for both SUPs are required.

Note   For more information on how to downgrade the Cisco cBR-8 router, see corresponding Cisco cBR-8 Upgrade Guide in the Upgrade Section. When downgrading Cisco cBR-8 router, should there be any difference between the steps in the Cisco cBR-8 Upgrade Guide and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

Step 1   Copy Cisco IOS XE software package to bootflash: and stby-bootflash:.

```
copy <location>/<ios_xe_software_file> bootflash:
copy <location>/<ios_xe_software_file> stby-bootflash:
```

Step 2   Verify Cisco IOS XE software package against the md5 hash as provided in the Cisco.com Software center.

```
verify /md5 bootflash:<ios_xe_software_file>
verify /md5 stby-bootflash:<ios_xe_software_file>
```

Step 3   Backup the current running config to bootflash:.

```
copy running-config bootflash:pre-upgrade.cfg
```

Step 4   Check the system status prior to upgrade. It is recommended that the information is saved to compare against the system status after upgrade. For commands that are used to check the status, see the **show** commands at the end of this section.

Step 5   Copy the Cisco 2x2 RPD image package to a TFTP server that is accessible by the 2x2 RPDs.

Step 6   Verify the current 2x2 RPD software version.

```
show cable rpd sw-version
```

Step 7   Downgrade all 2x2 RPDs image via SSD from cBR-8.

```
cable rpd all ssd <tftp_server_ip> tftp <rpd_file_path>
```

Note   The **all** command is not recommended in large scale 2x2 RPD deployment. If you have many 2x2 RPDs, it is recommended to upgrade the 2x2 RPD per line card or per OUI.

Step 8   Verify the 2x2 RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

Step 9   Verify that all 2x2 RPDs have downloaded the new image.

```
cable rpd all ssd status
show cable rpd
```

Step 10   Configure the chassis to boot the system with target Cisco IOS XE image. Save the running configuration.

```
Configure terminal
no boot system
boot system bootflash:<ios_xe_software_file>
config-register 0x2102
end
copy running-config startup-config
```

Step 11   Reload and start the cBR-8 router.

```
Reload
```

Step 12   Check that all the 2x2 RPDs have been downgraded to the target version.

```
show cable rpd
show cable rpd sw-version
```

What to do next

These **show** commands might be used during the verification test:

- **show version**
- **show platform**
- **show platform diag**
- **show environment**
- **show environment power**
- **show platform hardware slot P <0-5> mcu status**
- **show facility-alarm status**
- **show redundancy**
- **show redundancy line card all**
- **show ip ospf neighbor**
- **show cable modem voice**
- **show cable calls**
- **show cable licenses all**
- **show inventory**
- **show log**
- **show cable rpd**
- **show cable modem summary total**
- **show cable rpd lcha**
- **show running**
- **show tech**

Downgrading 2x2 RPD Only

Before you begin

Before downgrading the system, make sure the following requirements are met:

- Download new image file from the following Cisco.com Software Center URL:

    https://software.cisco.com/download/home/286321539/type

    - RPD 2x2 V4.1: **RPD-2x2-V4.1.0.SSA**

    - RPD 2x2 V3.1: **RPD-2x2-V3.1.3.SSA**

    - RPD 2x2 V2.0.1: **sw.package.signed_enc.2x2rpd.2.0.1.signed.tar.gz.SSA**

Step 1 Copy the Cisco 2x2 RPD image package to a TFTP server that is accessible by the 2x2 RPDs.

Step 2 Verify the current 2x2 RPD software version.

```
show cable rpd sw-version
```

Step 3 Downgrade all 2x2 RPDs image via SSD.

`cable rpd all ssd <tftp_server_ip> tftp <rpd_file_path>`

Note The **all** command is not suggested in large scale 2x2 RPD deployment. If you have too many 2x2 RPDs, it is recommended to upgrade the 2x2 RPD per line card or per OUI.

Step 4 Verify the 2x2 RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

Step 5 Verify that all 2x2 RPDs have downloaded the new image.

```
cable rpd all ssd status
show cable rpd
```

Step 6 Check that all the 2x2 RPDs have been downgraded to the target version and that they are online.

```
show cable rpd
show cable rpd sw-version
```

What to do next

These **show** commands might be used during the verification test:

- **show version**
- **show platform**
- **show platform diag**
- **show environment**
- **show environment power**
- **show platform hardware slot P <0-5> mcu status**
- **show facility-alarm status**
- **show redundancy**
- **show redundancy line card all**
- **show ip ospf neighbor**
- **show cable modem voice**
- **show cable calls**
- **show cable licenses all**
- **show inventory**
- **show log**
- **show cable rpd**
- **show cable modem summary total**
- **show cable rpd lcha**
- **show running**
- **show tech**

Downgrading cBR-8 Router Only

The following scenarios are supported in downgrading the cBR-8 router.

cBR-8 original version	2x2 RPD version	2x2 RPD state before downgrade	cBR-8 downgrade version	2x2 RPD state after downgrade
16.12.1x	Lower than 4.2	init(gcp)	Lower than 16.12.1x	online

Note   For more information on how to downgrade the Cisco cBR-8 router, see corresponding Cisco cBR-8 Upgrade Guide in the Upgrade Section.

Before you begin

Before downgrading the system, make sure the following requirements are met:

- Download new image file from the following Cisco.com Software Center URL:

  https://software.cisco.com/download/home/286283913/type

  - IOS XE Software Version 16.12.1w: **cbrsup-universalk9.16.12.01w.SPA.bin**

  - IOS XE Software Version 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**

  - IOS XE Software Version 16.10.1c: **cbrsup-universalk9.16.10.01c.SPA.bin**

- Console access for both SUPs are required.

What to do next

The following **show** commands might be used during the verification test:

- **show version**

- **show platform**

- **show platform diag**

- **show environment**

- **show environment power**

- **show platform hardware slot P <0-5> mcu status**

- **show facility-alarm status**

- **show redundancy**

- **show redundancy line card all**

- **show ip ospf neighbor**

- **show cable modem voice**

- **show cable calls**

- **show cable licenses all**

- **show inventory**

- **show log**

- **show cable rpd**

- **show cable modem summary total**

- **show cable rpd lcha**

- **show running**

- **show tech**